

The SAASC convened on Thursday, April 18, 2019 to consider a proposal from the College of Engineering regarding a proposal to change admission criteria.

Attendance: Azhar Swanson, Kevin Donohue, Shawn Caudill, Tom Troland, Brad Kerns, Herman Farrell (Chair)

Azhar Swanson acted as facilitator of this proposal.

Discussion:

The proposal involves raising the standards for admission to the College of Engineering, including changing the ACT Math score requirement from 23 or higher to 25 or higher or the SAT equivalent from 570 to 590 or higher and in a changes to the alternative admission route regarding Math Department course pre-requisites. In addition, the proposal states: “we are proposing that students who are not initially admitted and transfer students from outside of UK be required to have a cumulative GPA of 2.5 and complete MA 110 with a grade of B or higher.”

The rationale for these changes is to set up incoming students for success in their areas of study in Engineering by ensuring that they have the requisite base of knowledge before they engage with the rigorous curriculum. It was noted in the meeting that there is evidence that raising the standards actually works to improve retention and graduation rates. The bridge programming that is included in this proposal creates a pathway for students who are not initially admitted to Engineering to have an opportunity to improve their scores, take pre-requisite courses and then “come into engineering...after obtaining a solid foundation in basic science and math courses.”

Vote:

A motion was made and seconded that the SAASC approve the proposal.

The vote in favor of the proposal was unanimous.

Proposal to Change Admission Criteria  
College of Engineering  
April 30, 2019

The College of Engineering submits this proposal to increase admission criteria into the pre-engineering disciplines. If approved, the new admission criteria will be applied beginning with the Fall, 2020 cohort.

The current admission criteria with proposed changes indicated in red are as follows;

To be accepted to the College of Engineering, high school students must have both:

- An ACT math score of ~~23~~ 25 or higher, or the SAT equivalent of ~~570~~ 590 or higher.
- An unweighted high school GPA of 3.0 or higher.

For students who meet the high school GPA requirement but not the ACT or SAT requirement, alternative admission routes include:

1. 3 or above on the Calculus AB portion of the Advanced Placement Exam, or
2. Eligibility to enter MA 110 based on the UK Proctored Math Department Placement Exam (~~61 percent or higher~~)
- ~~3. Completion of or the equivalent of MA 110 with a grade of C or higher.~~
- ~~4. Completion of or the equivalent of MA 109 and MA 112 with a grade of C or higher.~~

Students who are not initially admitted into the College of Engineering may apply at a later date as a transfer student.

To be accepted to the College of Engineering, transfer students must have a minimum cumulative college GPA of 2.5 and have completed MA 110 or its equivalent (or MA 109 and 112 or their equivalencies) with a grade of B or higher. Students who do not receive a B in these courses but who have completed calculus courses required in the Engineering curricula will be considered on a case-by-case basis.

Additionally, all students must meet the minimum Kentucky statewide academic readiness requirements for Reading and Writing to be admitted to the College of Engineering:

- Reading: Students must have an ACT Reading subscore of 20 or above (or SAT subscore of 26 or above in Critical Reading);
  - English/Writing: Students must have an ACT English subscore of 18 or above (or SAT of 25 or above in Writing).
- Students who do not meet the reading/ writing requirements will be required to take the ACCUPLACER exam and receive a score of 244 or better.
  - Students who do not meet the minimum score on the ACCUPLACER will be required to take APP courses (UK 120 for Reading and UK 130 for Writing) and can be considered for admission to the College of Engineering after successful completion of these courses.

## International Students

### Freshmen:

In addition to meeting the requirements above, international freshman applicants must ~~have both the minimum ACT/SAT scores, and must also~~ obtain a Test of English as a Foreign Language (TOEFL) score of 71 or above or an International English Language Testing System (IELTS) score of 6.0 or above. Students who received a TOEFL score of 71 but less than 100 (IELTS score of 6.0 but less than 7.5) will be admitted to the College of Engineering but will be required to participate in English for Academic Purposes (EAP).

If students do not meet the IELTS/TOEFL (6.0 or 71) or ACT/SAT requirements, they will be admitted to the College of Engineering after meeting the following criteria: attend ESL, meet EAP requirements, and complete the appropriate math class. They must retake the TOEFL and earn a minimum score of 71 or the IELTS and earn a minimum score of 6.0. Then they would apply for a change of major to Engineering.

### Transfer:

In addition to the ~~alternative routes listed above~~ requirements listed above, international transfer applicants must obtain a Test of English as a Foreign Language (TOEFL) score of 71 or above (527 paper-based); an International English Language Testing System (IELTS) score of 6.0 or above; or completion of the first and second English composition classes (e.g., ENG 101 and 102) from another US college, i.e., institution upon review. If students do not meet these requirements once they have completed UK's ESL program, they must retake the TOEFL and earn a minimum score of 71 or the IELTS and earn a minimum score of 6.0.

### Rationale for Changes:

Currently, about 11% of the College's freshman cohort (approximately 80 students) are admitted with MA ACT scores less than 25. The College of Engineering has assessed the success of these students. The assessment shows that the 3<sup>rd</sup> fall retention of students in the College of Engineering with a MA ACT score of less than 25 is approximately 36%. While a number of the students eventually leave Engineering and remain at the University, their 4-yr graduation rate is very low (19%) due to the time that they spend in engineering with no success. By the time they leave engineering their GPAs are low, some on probation and at risk of suspension. The 3<sup>rd</sup> fall retention rate in the College of Engineering of students with MA ACT scores of 25 and 26 increases to approximately 48%. The assessment also demonstrates that HS GPA is also a good indicator of success in Engineering. Students with a HS GPA between 2.5 and 2.9 are retained in the College at a rate of 23% where those with a HS GPA between 3.0 and 3.5 are retained in the College at a rate of 55%. ***Based on this assessment, we believe that it is in the students' best interest to increase the admission criteria into the College of Engineering to a MA ACT of 25 and an unweighted HS GPA of 3.0.***

Research also shows that a number of our benchmark/aspirant schools that publish their admission criteria currently have higher admission standards than UK College of Engineering. For example, University of Louisville admits students to engineering with a MA ACT of 25 and HS GPA of 3.0 or a MA ACT of 24 with a HS GPA of 3.5. University of Tennessee also requires a MA ACT of 25. They also use a success indicator score based on MA ACT and HS GPA. Based on their required score, a student with a MA ACT of 25 would be required to have a 3.5 HS GPA. While some schools do not have specific engineering admission criteria, they report higher average ACT scores and HS GPA's for students admitted into their Colleges.

As indicated in the admission criteria above, alternative methods for entering the College of Engineering are available. If students do not meet the MA ACT admission criteria but do have the required high school GPA, they can also be admitted based on scores on the Calculus AP exam or a proctored math placement exam. If they do not meet either of these alternative admission requirements, they must complete the MA 109 and MA 110 sequence prior to admission. With the current criteria, students are required to complete MA 110 with a grade of C or better. However, our assessment demonstrates that students with a lower MA ACT score who complete MA 110 with a C are not successful in Calculus 1 (MA 113). For example, of the students with a MA ACT of 24 who received a C in MA 110, 86% received a D, E or W grade in MA 113 whereas of the students with a MA ACT of 24 who received an A or B in MA 110, only 35% received a D, E or W grade in MA 113. In addition, all engineering students are required to have a cumulative GPA of 2.5 and a GPA of 2.5 in selected courses to move from their pre-engineering major to their engineering major (i.e. achieve engineering standing). ***Therefore, we are proposing that students who are not initially admitted and transfer students from outside of UK be required to have a cumulative GPA of 2.5 and complete MA 110 with a grade of B or higher.***

In collaboration with the College of Engineering and based on their own assessment, the UK Math Department will increase the pre-requisites for MA 110 from a MA ACT of 23 to a MA ACT of 25. This will further support the success of students in the math sequence by requiring students with these lower MA ACT scores to start in College Algebra (MA 109).

#### Bridge Programming for Students Not Admitted to Engineering:

As previously mentioned, students who are not automatically admitted to Engineering can be admitted by meeting alternative admission criteria. It is anticipated that these students will go to Arts and Sciences in their Exploratory Program and complete MA 109 and MA 110 along with their general education courses. The College of Engineering will work with the advisors in Arts and Sciences to provide a clear pathway for these students. As part of this bridge program, students will be strongly encouraged to take UK 101 during their first semester and participate in an engineering student success class during their second semester. They will also be counseled on other career options in addition to engineering. ***It is not uncommon for students who have been admitted to Engineering and fail, to continue in engineering without success regardless of advice to explore other majors. They re-take engineering classes and continue to lower their GPAs. This not only decreases morale but puts them at risk of probation or suspension***

*and could delay their graduation. We believe it is better for these students to focus on their general education courses, improve their math skills, receive guidance and learn about career options and then come into engineering only after obtaining a solid foundation in basic science and math courses rather than starting them in the challenging engineering courses at the beginning and having them fail. We have no doubt this will retain these students at a higher rate at the University and improve their graduation rates.*

Bridge Programming for Admitted Engineering Students Who Are Not Calculus Ready: Data shows that students who enter the College of Engineering with a MA ACT of 27 or greater (calculus ready) have a 3<sup>rd</sup> fall retention rate of approximately 65%. We are working on a summer bridge program for students admitted to the College of Engineering but are not calculus ready (MA ACT of 25 and 26). These students will have the opportunity to live on campus the summer before their freshman year, take MA 110 in a small-class environment, and participate in formal programming related to student success. This will not only acclimate the students to campus but will also set them up to take MA 113 during their first fall semester which will hopefully improve their retention and graduation rates.